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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/568,594

02/17/2006

Tetsuro Mizushima

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07/31/2008

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ALEXANDRIA, VA 22320-4850

EXAMINER

LAVARIAS, ARNEL C

ART UNIT

PAPER NUMBER

2872

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/568,594	Applicant(s) MIZUSHIMA ET AL.	
	Examiner Arnel C. Lavarias	Art Unit 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6,9 and 10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9 and 10 is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendments to the specification and abstract of the disclosure in the submission dated 5/1/08 are acknowledged and accepted. In view of these amendments, the objections to the specification in Section 5 of the Office Action dated 2/5/08 are respectfully withdrawn.
2. The amendments to Claims 9-10 in the submission dated 5/1/08 are acknowledged and accepted.
3. The cancellation of Claims 7-8 in the submission dated 5/1/08 is acknowledged and accepted.
4. In view of the amendments made to the claims above, the objections to the claims in Section 8 of the Office Action dated 2/5/08 are respectfully withdrawn.

Specification

5. The disclosure is objected to because of the following informalities:

Page 16, line 3- 'recoded' should read 'recorded'. It appears that Applicants amended the incorrect line on Page 16 in the amendments to the specification in the submission dated 5/1/08.

Appropriate correction is required.

Response to Arguments

6. The Applicants' arguments filed 5/1/08 have been fully considered but they are not persuasive.
7. The Applicants argue that, with respect to Claims 1 and 3, as well as Claims 2, 4-6 which depend on Claims 1 and 3, the Office Action fails to provide any support for the Official Notice taken in Section 10 of the Office Action dated 2/5/08. As required by MPEP 2144.03, the Examiner notes that U.S. Patent No. 5607799 to Moerner et al. discloses holographic recording media that may have thicknesses that are greater than 100 microns (See for example col. 5, lines 60-67; col. 6, lines 45-61 of Moerner et al.). Such 'thick' holographic recording media have been known in the art of holographic recording for some time.
8. Claims 1-6 are again rejected as follows.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
10. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kita et al. (JP 06-274084 A), of record, in view of Pu et al. (U.S. Patent No. 5483365), of record, and Smith (U.S. Patent No. 4179182), of record.

As required by MPEP 2144.03, U.S. Patent No. 5607799 to Moerner et al. is being cited to provide evidence (See Section 7 above in this Office Action) supporting the statement of Official Notice taken in the following rejection.

Kita et al. discloses a holographic recording medium and associated method of holographic recording (See for example Figures 1-3, 5) comprising, in a substantially identical plane, a white-light reconstruction holographic recording layer region (See for example Abstract; 3b in Figures 1, 5), at least in part of which a white-light reconstruction hologram is formed and a Fourier holographic recording layer region (See for example Abstract; 3a in Figures 1, 5), at least in part of which at least one hologram is recorded. Kita et al. additionally discloses a hologram formed in the white-light reconstruction holographic recording layer being a reflection hologram (See 3b in Figures 1, 5; it is noted that incident light and light reflected from both holograms 3a and 3b enter and leave the same top surface 1/2 and hence the hologram acts as a reflective hologram). Kita et al. does not specifically disclose the white-light reconstruction holographic recording layer region being 3 μm to 40 μm thick, the Fourier holographic recording layer region being 100 μm to 5 mm thick and having multiplexed holograms, and irradiating as an object beam a two-dimensional pattern image created by a spatial light modulator to the recording layer region. However, such hologram recording medium thickness dimensions, and the multiplexing ability of the Fourier holographic recording layer region are all commonly known in the art of holography. Further, the use of a spatial light modulator in the object beam is conventional in the art of holography. For example, Pu et al. teaches a conventionally known Fourier holographic recording system

(See for example Figures 1-2) for recording multiplexed holograms (via peristrophic multiplexing) in a relatively 'thick' recording layer (of the order of 40 microns) (See for example 40 in Figures 1-2; col. 6, line 20-col. 7, line 8). Though Pu et al. does not specifically disclose thicknesses greater than 100 microns, such would have been obvious to one having ordinary skill in the art. Official notice is taken. Such would have been obvious specifically for the purpose of increasing the storage capacity of the recording medium, since other multiplexing techniques, such as shift, wavelength, angular, etc., may also be used in combination with peristrophic multiplexing to increase the storage capacity (See for example col. 6, line 66-col. 7, line 8). In addition, Pu et al. teaches the use of a spatial light modulator (See for example 50 in Figures 1-2) in the object/signal beam for introducing information onto the object/signal beam which is to irradiate the recording medium. Further, Smith teaches a known apparatus utilizing white-light reflection holograms for displaying an image (See for example Abstract; Figures 9-10), wherein the white-light hologram is formed of a relatively 'thick' recording material (See for example 18 in Figures 9-10; col. 1, lines 25-38; col. 2, lines 33-47, where the thickness is on the order of several microns). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the white-light reconstruction holographic recording layer region be 3 μm to 40 μm thick, the Fourier holographic recording layer region be 100 μm to 5 mm thick and have multiplexed holograms, and irradiating as an object beam a two-dimensional pattern image created by a spatial light modulator to the recording layer region, as taught by Pu et al. and Smith, in the recording medium of Kita et al., for the purpose of 1) increasing the storage capacity

of the recording medium while minimizing cross-talk noise between recorded holograms, 2) minimize image aberrations on playback of the hologram due to thickness aberrations and variations, and 3) allow flexibility in providing any particular image to be recorded onto the recording medium based on the intended application.

Allowable Subject Matter

11. Claims 9-10 are allowed.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent Application Publication US 2006/0203315 A1 to Haga et al.

Haga et al. is being cited to evidence a holographic recording medium (See for example 2 in Figures 1-2) similar to that disclosed in the instant application. However, Haga et al. is not available as prior art against the instant application (It is noted that this was improperly stated in the previous Office Action.).

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnel C. Lavarias whose telephone number is 571-272-2315. The examiner can normally be reached on M-F 10:00 AM - 6:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephone B. Allen can be reached on 571-272-2434. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2872

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Arnel C. Lavarias
Primary Examiner
Group Art Unit 2872
7/24/08

/Arnel C. Lavarias/
Primary Examiner, Art Unit 2872